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Comparison of the Accuracy of Traffic Counting Devices

Rodrigo Netto de Souza
Lyles School of Civil Engineering, Purdue University
Laura Slusher
Indiana Local Technical Assistance Program

ABSTRACT

Traffic counting devices are commonly used by governmental agencies and private companies in order to assess traffic patterns and the level of occupancy of roadway networks. The data provided by these devices normally encompasses traffic volumes, vehicle classes and vehicle speeds, and are used by traffic engineers in the planning, design and operations of transportation systems. An evaluation of the accuracy of these devices is of great importance because traffic management decisions are compromised without qualified data. This research evaluated the performance of two different models of traffic counters, Jamar Technologies' Radar Recorder and Vaisala's Traffic Analyzer NC-200, both commonly used by the Indiana Local Technical Assistance Program in data collection for local agencies. These devices were installed for eight counts at seven different road segments under various traffic conditions. The accuracy of each device was assessed by comparing its readings to hand-count data also taken at each location. Results suggest that these devices have a high level of accuracy when measuring traffic volumes and vehicle speeds, with errors usually below 15% for volumes and below 10% for speeds. However, both devices failed to provide satisfactory results in terms of vehicle classification, with significant truck detection errors in 4 out of 8 counts for each model. The findings of this research will be helpful for local transportation agencies in the management of their traffic data in order to assure safe and informed decisions about their transportation network.

KEYWORDS

Traffic counting devices, accuracy, vehicle detectors, traffic data

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